

Figure 1. Amino Acid Sequences of Murine 1A6 and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain κ Subgroup I (Hum κ I).

V_H Domain

	1	11	21	31	41
Mouse1A6	EVQLQQSGAE	LVKPGASLKL	SCTASGFNIK	DTYIHWMKQR	PEQGLEW I GR
	**	**	*	*	**

HumIII	EVQLVESGGG	LVQPGGSLRL	SCAASGFNFS	-----WVRQA	PGKGLEWVA—
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	51 a	61	71	81 a bc	91
Mouse1A6	IDPANDNTIYD	PKVQGKATMT	ADTSS NTAYL	QLNSLTSEDTAVY	YCTT
		**	*	*	**

HumIII	-----A	DSVKGRF T IS	RDDSKNTAYL	QMNSLRAEDTAVY	YCTT
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	103	111
Mouse1A6	SGYWFA YWGQGLT	VSS

HumIII	-----WGQGLT	VSS
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V_L Domain

	1	11	21	31	41	51
Mouse1A6	DIVLTQSPAT	LSVTPGDSVS	LSCRASQ	SIS NNLHWYQ	QKH SESPRL	LIKH ASQ
	**	**	***	*	***	*

Hum κ I	DIQMTQSPSS	LSASVGDRV	ITC-----	-----WYQ	QKP GKAPK	LLIY --
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	61	71	81	91	101	
Mouse1A6	SISG I PS	RFSGSGSGTD	FTLSINSVET	EDFGMFFCQ	Q SNSWPY	TFFG GTKLEIKR
	*	*	*	*	*	*

Hum κ I	---GVPS	RFSGSGSGTD	FTLTSSLQP	EDFATYYC ---	-----FGQ	GTKVEIKR
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The CDR residues as defined by both Kabat and Chothia are shown in boldface.

Fig. 2A

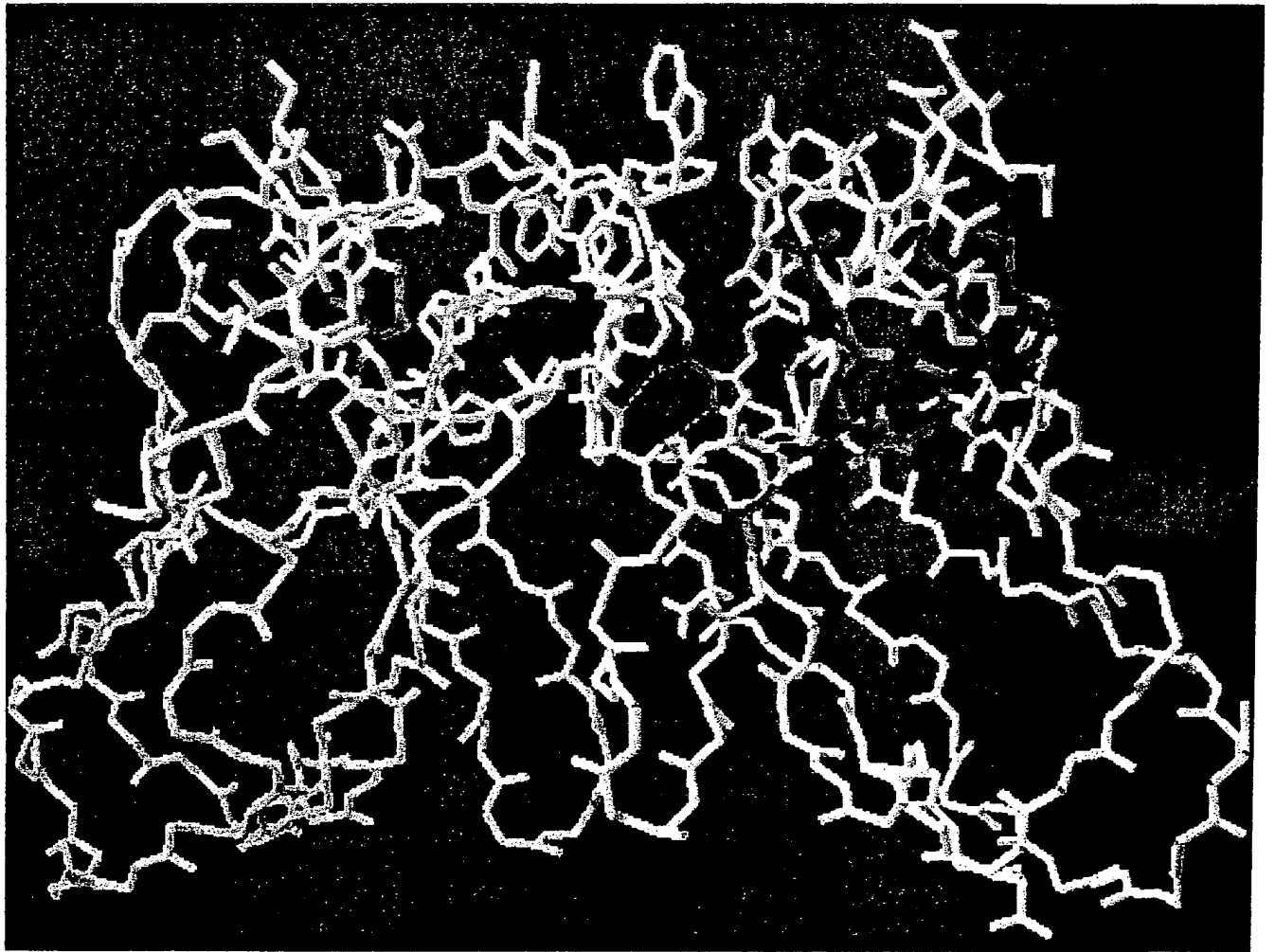


Figure 2A

Fig. 2B

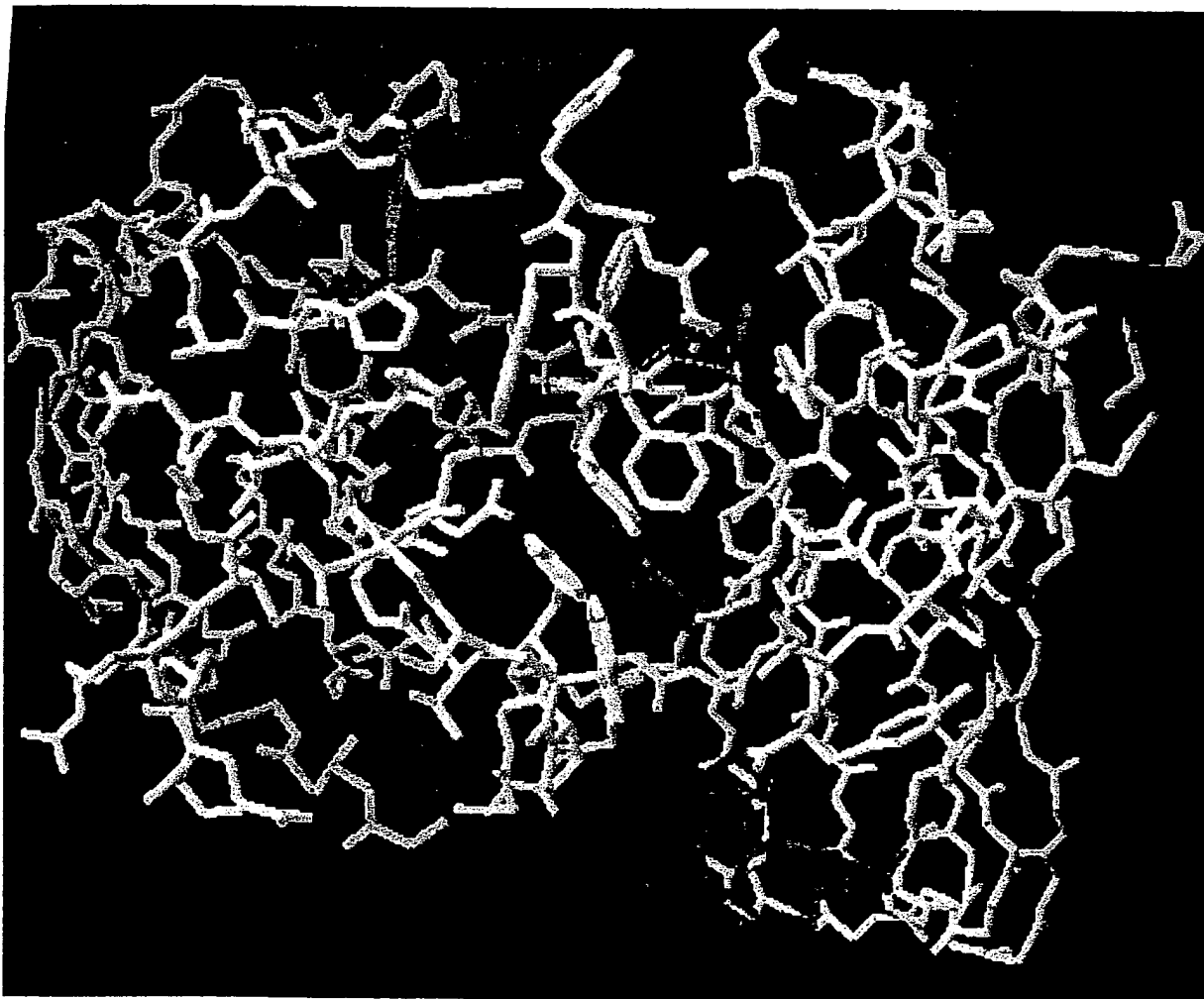
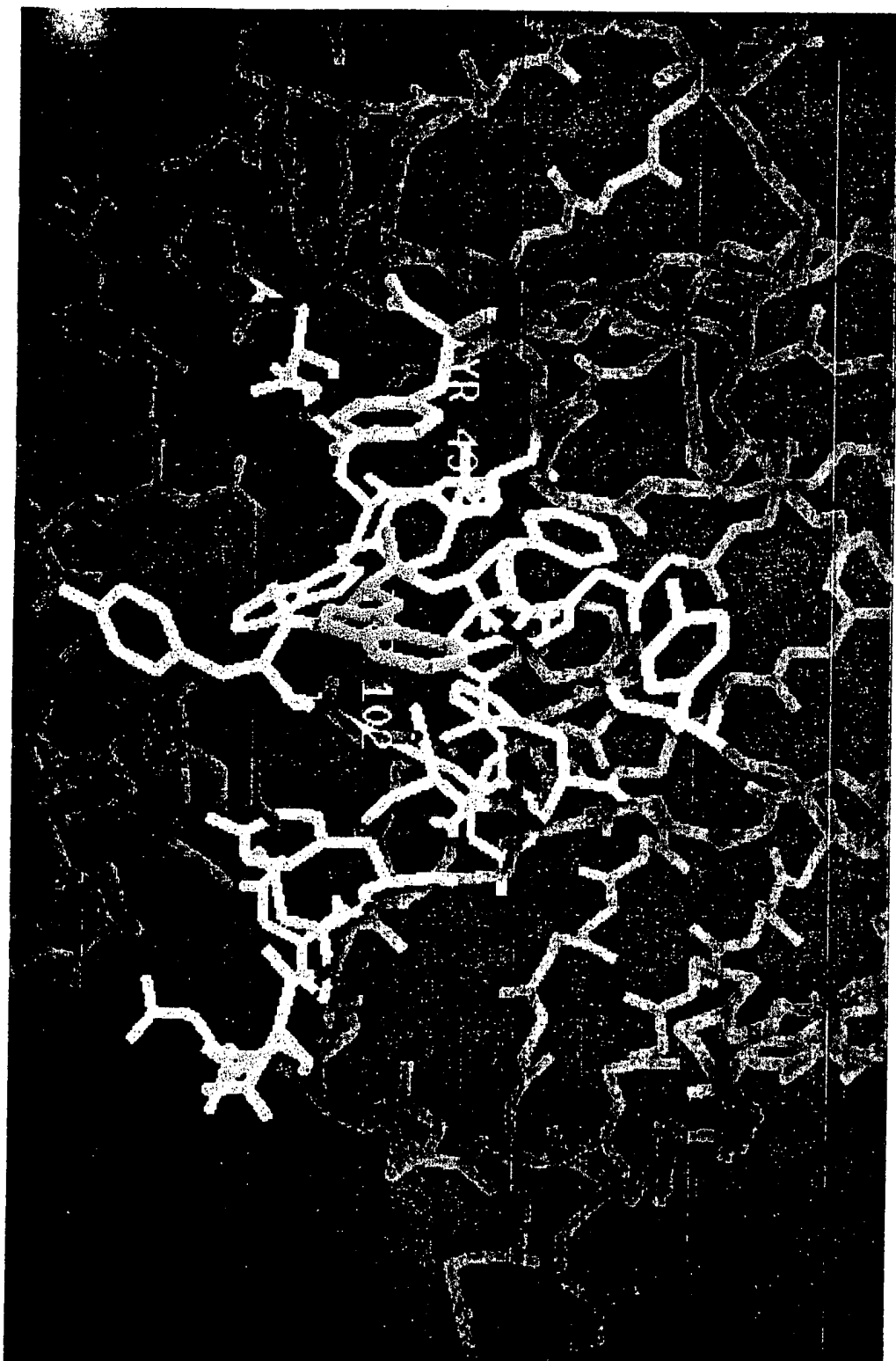


Fig. 2C



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Figure 3. Amino Acid Sequences of Murine 1A6, Humanized 1A6 (Hum19), and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain κ Subgroup I (HumKI).

V_H Domain	
	1 11 21 31 41
Mouse	EVQLQQSGAE LVKPGASLKL SCTASGFNIK DTYIHWMKQR PEQGLEWI GR * * * * *
Hum19	EVQLVESGGG LVQPGGSLRL SCAASGFNIK DTYIHWVRQA PGKGLEWVAR
HumIII	EVQLVESGGG LVQPGGSLRL SCAASGFNFS -----WVRQA PGKGLEWVA—
	51 a 61 71 81 a bc 91
Mouse	IDPANDNTIYD PKVQGKATMT ADTSS NTAYL QL NSLTSED TAVY YCT T * * * * *
Hum19	IDPANDNTIYA DSVKG RFT IS SDDSKNTAYL QMNSLRAEDTAVY YCTA *
HumIII	-----A DSVKG RFT IS RDDSKNTAYL QMNSLRAEDTAVY YCTR
	103 111
Mouse	SGYWFA YWGQGT LT V T VSS
Hum19	SGYWFA YWGQGT LT V T VSS
HumIII	-----WGQGT LT V T VSS
V_L Domain	
	1 11 21 31 41 51
Mouse	DIVLTQSPAT LSVTPGDSVS LSCRASQ SIS NNLHWYQ QKH SESPRL LIKH ASQ * * * * *
Hum19	DIQMTQSPSS LSASVGDRVT ITCRASQ SIS NNLHWYQ QKP GKAPKLLI YH ASQ
HumKI	DIQMTQSPSS LSASVGDRVT ITC----- WYQ QKP GKAPKLLI Y -- ----
	61 71 81 91 101
Mouse	SISG I PS RFSGSGSGTD FTL SINS VET EDFGMFFC Q Q SNSWPYTFGG GTKLEIKR * * * * *
Hum19	SISGVPS RFSGSGSGTD FTLTISSLQ P EDFATYYC Q Q SNSWPYTFGQ GTKVEIKR
HumKI	---GVPS RFSGSGSGTD FTLTISSLQ P EDFATYYC --- FGQ GTKVEIKR

The CDR residues as defined by both Kabat and Chothia are shown in boldface.

Figure 4. cDNA Sequences of Humanized scFv3 (Hum3) [SEQ ID. 2].

The restriction sites are underlined. CCATGG NCO I SITE; GGATCC BAMH I SITE; GTAAAC HPA I SITE

CGAACCATGGGCGATATC**cagatg**ACCCAATCTCCG**tctagc**CTGAGC**gccAG**
TgttGGTgatCGAGTTaccattactTGCCGCGCCAGCCAATCTATCAGTAATAATCTTC
ACTGGTATCAACAAaaaccgggtaaagctCCGaaaCTTCTTATCAAACACGCCTCTCAG
AGCATTAGCGGCgttCCGAGCCGCTTCTCTGGCTCTGGCTCGGGCACGGACTTT
ACCCTTaccATCAGCTCTcttcagccgGAAGACtttGCCaccTATtatTGTCAGCAGTCTAA
TAGCTGGCCGTATACCTTCGGTcaaGGTACCAAGgtcGAGATTAAGCGCGGCGG
TGGCGGTTCTGGTGGCggtggtagcggtaggcGGTGGATCCGGTGGCGGTGGCAGCGA
AGTTCAACTTGTTGAGTCTGGTGGCGGTCTGGTTCAGCCGGGTGGCTCTCTGC
GCCTGTCTTGCGCAGCAAGCGGTTTCAACATTAAGGACACCTACATCCATTGG
atgAGGCAAGCTCCGGGTAAAGGTCTGGAGTGGGTGGCACGTATCGACCCGGC
AAACGACAACACCATTTACGATCCGAAGGTGCAGGGCCGTTTTACTatgTCTGC
GGACacCTCTAAGAACACCGCGTACCTTCAGATGAACTCTCTGCGTGCCGAGG
ACACCGCCGTCTACTACTGCACGACCTCTGGCTACTGGTTTGCCTACTGGGGC
CAGGGCACGCTTGTCACCGTCTCTTCTGGT**TaAaCCC**

Figure 5. Protection of HRV15 infection by mouse 1A6 scFv (Ms1) and humanized 1A6 scFv proteins (Hs3, 4, 7, 17, 18, 19 and 21).

